

AMENDMENTS TO THE DRAWINGS

In the Office Action, the Examiner objected to Figures 1–6, and requested corrected drawing sheets.

As a preliminary matter, Applicant acknowledges that the Examiner objected to drawings “because the title, application number, inventor name, attorney docket number information shown at the top of each figure should not be included in the drawings.” Applicant refers the Examiner to 37 C.F.R. 1.84(c), which states:

(c) *Identification of drawings.* Identifying indicia, if provided, should include the title of the invention, inventor’s name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin.

Applicant’s drawings include such identification, and the information is located within the top margin of the drawings, in accordance with the rule. Applicant submits that the current identification of the drawings is acceptable, and requests the Examiner to withdraw the objection or provide further clarification.

In addition, the Examiner objected to FIG. 3A because it lacked descriptive labels/legends. Applicant submits a replacement sheet that includes descriptive labels. The added labels are consistent with the corresponding description throughout the present application. No new matter has been added by way of this amendment.

REMARKS

This amendment is responsive to the Office Action dated May 30, 2006. Applicant has amended claims 2, 18, 20, 21, 26, 27, 37, 42, 58, 69, 71, 72, 77, 83 and 85. Claims 2–15, 18–55, 58–81 and 83–95 are pending.

Claim Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 85–87 under 35 U.S.C. 102(e) as being anticipated by Malcolm (WO 00/07124). As a preliminary matter, Applicant notes that Malcolm does not appear to qualify as prior art under 35 U.S.C. 102(e), since the International Application does not designate the United States. However, Malcolm may qualify as prior art under 35 U.S.C. 102(a). In any case, Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. Malcolm et al. fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(a), and provides no teaching that would have suggested the desirability of modification to include such features.

As one example, Malcolm fails to teach or suggest transmitting routing information for identifying one or more addresses of client devices that a decoder module supports over a network to an encoder module, as recited by Applicant's claim 85. In the Office Action, the Examiner stated that Malcolm teaches this element at page 9, lines 20–26.¹ Applicant has amended claim 85 to clarify that the method includes transmitting routing information for identifying one or more addresses of client devices that a decoder module supports over a network to an encoder module.

Malcolm describes a leaf cache that receives requests from client devices for web objects stored on network servers. If the leaf cache does not already have a cached version of the web object stored in its memory, the leaf cache requests the web object from the root cache, which in turn requests the web object from a server.² In contrast to the requirements of claim 85, the portion of Malcolm cited by the Examiner teaches that “each cache 111 records web objects 133 in association with the URL used to request those web objects 133.”³ In other words, Malcolm

¹ Office Action dated May 30, 2006, at page 4.

² Malcolm, page 8, ll. 7–15.

³ Malcolm, page 9, ll. 25–26.

teaches that the cache associates with each web object a URL used in sending requests for the web object from the client devices to the server. This is fundamentally different from the requirements of claim 85 in several respects. First, neither an application-level request (i.e., an HTTP request) for a web object nor the URL associated with the web object can reasonably be construed as “routing information.” Second, the URL is not an address of a client device that is supported by the decoder module. To be clear, claim 85 requires transmitting routing information over a network to the encoder module, and that the routing information identify one or more addresses of client devices supported by the decoder. Contrary to the Examiner’s assertion, Malcolm provides no teaching or suggestion of the leaf cache transmitting to the root node routing information that identifies the addresses of client devices that the leaf cache supports. Quite the opposite, the URL identifies the web object located on the server. In fact, in the Malcolm system, the root node is entirely unaware of the identities of client devices supported by the leaf caches. Moreover, Malcolm makes no suggestion that routing information would be used to convey such addresses.

In order to support an anticipation rejection under 35 U.S.C. 102(a), it is well established that a prior art reference must disclose each and every element of a claim. This well known rule of law is commonly referred to as the “all-elements rule.”⁴ If a prior art reference fails to disclose any element of a claim, then rejection under 35 U.S.C. 102(a) is improper.⁵

Malcolm et al. fails to disclose each and every limitation set forth in claims 85–87. For at least these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicant’s claims 85–87 under 35 U.S.C. 102(a). Withdrawal of this rejection is requested.

Claim Rejection Under 35 U.S.C. § 103

Claims 2–4, 6–11, 15, 18, 24–31, 42–43, 45–51, 58, 72–79, 89–91

In the Office Action, the Examiner rejected claims 2–4, 6–11, 15, 18, 24–31, 42–43, 45–51, 58, 72–79, 89–91 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of

⁴ See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (CAFC 1986) (“it is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention”).

⁵ *Id.* See also *Lewmar Marine, Inc. v. Barient, Inc.* 827 F.2d 744, 3 USPQ2d 1766 (CAFC 1987); *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (CAFC 1990); *C.R. Bard, Inc. v. MP Systems, Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (CAFC 1998); *Oney v. Ratliff*, 182 F.3d 893, 51 USPQ2d 1697 (CAFC 1999); *Apple Computer, Inc. v. Articulate Systems, Inc.*, 234 F.3d 14, 57 USPQ2d 1057 (CAFC 2000).

Sarkissian et al. (USPN 6,771,646) (“Sarkissian”). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant’s claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

With reference to independent claims 2, 18, 26, 27, 42, and 77 for example, the applied references lack any teaching that would have suggested each extracted block having a destination address of a client device to which the extracted data block is destined and that is supported for decoding by at least one corresponding decoder module, and the encoder module passing through data not having a supported destination address. Similarly, the applied references lack any teaching or suggestion of receiving routing information over the network from one or more decoder modules, and determining one or more destination addresses of client devices to which the data is destined supported by each respective decoder module from the routing information, as recited by claim 72. The Examiner asserted that these features are taught by Malcolm. As explained above with respect to claim 85, Malcolm simply fails to disclose or suggest these features, in contrast to the Examiner’s assertion.

Moreover, Malcolm fails to teach or suggest the encoder module passing through data not having a supported destination address, as recited by independent claims 2, 18, 26, 27, and 77. The Examiner cited Malcolm at page 7, lines 28–32, as teaching this feature. However, the cited portion states that each cache includes a router-switch for receiving messages and distinguishing types of messages that should be processed by the cache from those that should not. Malcolm uses the example that the router-switch can divert all requests using FTP or HTTP to the cache for processing, while passing through other types of requests unchanged. Malcolm thus teaches passing through data based on a type of data, but provides no teaching or suggestion of passing through data based on a destination address of the client device to which the data is destined if the destination address is not supported by a decoder module.

With respect to dependent claims 8 and 47, Malcolm fails to teach or suggest transmitting an extra header identifying that the contents of a respective data block have been previously transmitted. The portion of Malcolm cited by the Examiner as teaching this feature makes no mention whatsoever of transmitting an extra header, let alone any teaching or suggestion of

transmitting an extra header to identify that the contents of a respective data block have been previously transmitted.

With respect to independent claim 26, the Examiner acknowledges that Malcolm fails to teach or suggest a hash table having one or more bins for associating a signature with one or more of the previously transmitted data blocks, the computed signature value being less than the number of hash table bins. The Examiner asserted that Sarkissian discloses such a hash structure, in which the computed signature value is less than the number of hash table bins. However, the cited portions of Sarkissian do not teach a mechanism where the computed signature value is less than the number of hash table bins.

Similarly, with respect to independent claim 27, the Examiner acknowledges that Malcolm fails to teach or suggest a hash table having one or more bins for associating a signature with one or more of the previously transmitted data blocks, the computed signature value being computed as a modulo of the number of bins. The Examiner asserted that Sarkissian discloses such a hash structure, in which the computed signature value is computed as a modulo of the number of bins. However, the cited portions of Sarkissian makes no mention whatsoever of the computed signature value being computed as a modulo of the number of bins. Rather, Sarkissian merely states that a hash function may be used to generate a hash of a signature for building a flow key.

With respect to dependent claims 29 and 30, Malcolm fails to teach or suggest that at least one of the data blocks is included in a packet, and the packet is encapsulated as one packet, and also fails to teach or suggest that at least one of the data blocks is included in a packet, as recited by claim 29, and at least one of the data blocks is included in a packet and the packet is encapsulated with at least one other packet in an outgoing packet for transmission, as recited by claim 30. The Examiner cites page 4, lines 4–21 of Malcolm, and page 9, lines 3–8 as teaching both these elements. However, these portions of Malcolm merely list types of data that may comprise web objects (e.g., text, pictures, animation), and state that the server may transmit an object signature to the root cache with the web object. Nowhere does Malcolm disclose or suggest encapsulating a data block as a single packet, or encapsulating the data block as a packet and encapsulating the packet with other packet(s) in an outgoing packet for transmission.

Sarkissian provides no teaching sufficient to overcome the deficiencies outlined above. Of course, the claims dependent on independent claims 2, 18, 26, 27, 42, 72, 77, i.e., claims 3–4, 6–11, 15, 24–25, 28–31, 43, 45–51, 58, 73–76, 78–79, and 89–91, incorporate all of the limitations of the respective base claims, and therefore are patentable for at least the reasons expressed above.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 2–4, 6–11, 15, 18, 24–31, 42–43, 45–51, 58, 72–79, 89–91 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

Claims 5, 13–14, 44, 52–54, 83–84

In the Office Action, the Examiner rejected claims 5, 13–14, 44, 52–54, 83–84 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Sarkissian and in further view of Garcia-Luna-Aceves (USPN 2001/0056416). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claims 5 and 44 specify that the encoder module operates as a node in the network and decides a route for the respective extracted data block to a decoder module supporting its destination address. Claims 13–14 and 52–54 specify that the synchronization mechanism is an implicit synchronization mechanism, and wherein the implicit synchronization mechanism is a reliable network transport protocol. Claims 83–84 specify determining network topology information based on routing information, and responsive to multiple decoder modules in the network supporting the same address, determining a destination decoder module based upon network topology information and routing criteria. The Examiner stated that Malcolm and Sarkissian fail to disclose these features, but asserted that incorporation of such features would have been obvious in view of Garcia-Luna-Aceves. Garcia-Luna-Aceves provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm and Sarkissian.

In view of the shortcomings of the Malcolm and Sarkissian references, it is not necessary to comment in detail on the teachings provided by Garcia-Luna-Aceves. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Garcia-

Luna-Aceves or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Garcia-Luna-Aceves and any aspect of the claimed invention.

Claims 19, 55, 59, 92

In the Office Action, the Examiner rejected claims 19, 55, 59, 92 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Sarkissian and in further view of Storer (USPN 4,876,541). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 19 and 92 specify that responsive to the least recently used data structure being at the maximum capacity, the encoder module deletes the previously transmitted data block having the order position of the least recently used data block. Claim 55 specifies that responsive to the data block being unencoded, the decoder module stores the contents of the respective received data block as a previously received data block further comprises determining whether to delete at least one of the previously received data blocks. Claim 59 specifies replacing the previously received data block having the order position of least recently used data block with the respective received data block. The Examiner stated that Malcolm and Sarkissian fail to disclose these features, but asserted that incorporation of such features would have been obvious in view of Storer. Storer provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm and Sarkissian.

In view of the shortcomings of the Malcolm and Sarkissian references, it is not necessary to comment in detail on the teachings provided by Storer. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Storer or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Storer and any aspect of the claimed invention.

Claims 32–33

In the Office Action, the Examiner rejected claims 32–33 under 35 U.S.C. 103(a) as being unpatentable over Malcolm et al. in view of Sarkissian et al. and in further view of Gorman

et al. (USPN 5,394,879). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claims 32–33 specify that the encapsulation module comprises a timer mechanism for ensuring that the at least one extracted data block is held in a buffer coupled to the encapsulation module for no more than a pre-determined maximum time before being transmitted. The Examiner stated that Malcolm and Sarkissian fail to disclose these features, but asserted that incorporation of such features would have been obvious in view of Gorman. Gorman provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm and Sarkissian.

In view of the shortcomings of the Malcolm and Sarkissian references, it is not necessary to comment in detail on the teachings provided by Gorman. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Gorman or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Gorman and any aspect of the claimed invention.

Claims 34–36, 63–68, 80–81

In the Office Action, the Examiner rejected claims 34–36, 63–68, 80–81 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Sarkissian and in further view of Adriano et al. (USPN 6,484,210). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claims 34 and 80 specify encoding at least one data block at a first layer of a model describing the flow of data across a network and the encapsulation module encapsulates the at least one extracted data block at a second layer of the model. Claim 35 specifies the system of claim 34 wherein the first and second layers are at the same layer of the model. Claim 36 and 81 specify specifies that one of the layers is a connection-oriented layer and the other layer is a connectionless layer. Claim 63 specifies that the system includes a decapsulation module for decapsulating a block of data received over the network. Claim 64 specifies that the received data block is included in a packet, and the packet has been decapsulated as one packet. The Examiner stated that Malcolm and Sarkissian fail to disclose these features, but asserted that

incorporation of such features would have been obvious in view of Adriano. Adriano provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm and Sarkissian.

In view of the shortcomings of the Malcolm and Sarkissian references, it is not necessary to comment in detail on the teachings provided by Adriano. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Adriano or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Adriano and any aspect of the claimed invention.

Claims 37-41, 69-71

In the Office Action, the Examiner rejected claims 37-41, 69-71 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Garcia-Luna-Aceves (USPN 2001/0056416). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 37 specifies that each extracted block having a destination address of a client device to which the extracted data block is destined and that is supported for decoding by at least one corresponding decoder module, and the encoder module passing through data not having a supported destination address. Claim 69 specifies a decoder module that transmits to the encoder module over the network routing information for identifying one or more addresses of client devices that the decoder module supports, the decoder module receiving data blocks from an encoder module. As explained above with respect to claims 2 and 85, Malcolm fails to disclose or suggest these features of Applicant's invention. Garcia-Luna-Aceves provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm.

In view of the shortcomings of the Malcolm reference, it is not necessary to comment in detail on the teachings provided by Garcia-Luna-Aceves. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Garcia-Luna-Aceves or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Garcia-Luna-Aceves and any aspect of the claimed invention.

Claim 88

In the Office Action, the Examiner rejected claim 88 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Storer. Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 88 specifies responsive to the data block being unencoded, storing the contents of the respective received data block as a previously received data block further comprises determining whether to delete at least one of the previously received data blocks. The Examiner stated that Malcolm fails to disclose these features, but asserted that incorporation of such features would have been obvious in view of Storer. Adriano provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm.

In view of the shortcomings of the Malcolm references, it is not necessary to comment in detail on the teachings provided by Storer. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Storer or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Storer and any aspect of the claimed invention.

Claims 93–95

In the Office Action, the Examiner rejected claims 93–95 under 35 U.S.C. 103(a) as being unpatentable over Malcolm et al. in view of Adriano. Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 93 specifies decapsulating the received block of data at a first layer of a model describing the flow of data across a network and decoding the received block of data at a second layer of the model. Claim 94 specifies that the first layer and the second layer are the same layer. Claim 95 specifies that one of the layers is a connection-oriented layer and the other layer is a connectionless layer. The Examiner stated that Malcolm fails to disclose these features, but

asserted that incorporation of such features would have been obvious in view of Adriano.

Adriano provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm.

In view of the shortcomings of the Malcolm references, it is not necessary to comment in detail on the teachings provided by Adriano. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Adriano or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Adriano and any aspect of the claimed invention.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 5, 13-14, 19, 32-41, 44, 52-55, 59, 63-71, 80-84, 88, and 92-95 under 35 U.S.C. 103(a). Withdrawal of these rejections are requested.

Allowable Subject Matter

In the Office Action, the Examiner indicated that claims 20-23, 60-62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In this Amendment, Applicant has amended claims 20 and 21, and has included certain subject matter recited by the base claims and intervening claims on which these claims depend. Applicant submits that claims 20, 21 and the claims dependent therefrom, i.e., claims 22-23, are in condition for allowance as amended.

Applicant points out that in Applicant's previous response dated November 30, 2005, Applicant rewrote each of allowable claims 60-62 in independent form including all subject matter from independent claim 42 and intervening claim 56. Applicant submits that claims 60-62 are in condition for allowance.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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